



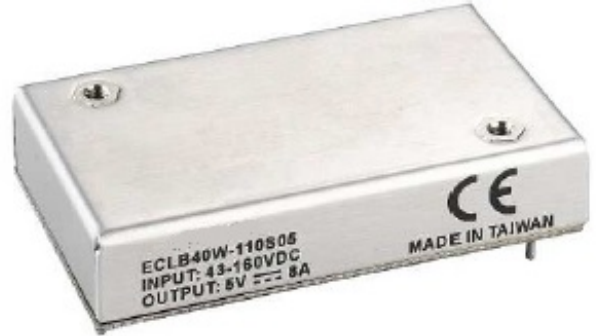
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# ECLB40W-110 SERIES 40 WATT 4:1 INPUT DC-DC CONVERTERS



## FEATURES

- \* 40W Isolated Output
- \* Efficiency to 91%
- \* 2.05" X1.2" X0.4" Six-Sided Shield Metal Case
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Fixed Switching Frequency
- \* Input Under Voltage Protection
- \* Over Current Protection
- \* Remote On/Off
- \* Low No Load Power Consumption
- \* Continuous Short Circuit Protection
- \* No Tantalum Capacitor Inside
- \* UL60950-1 2nd (Basic Insulation) Approval
- \* Meets EN50155 with External Circuits
- \* Fire & Smoke Meets EN45545-2
- \* 3000m Operating Altitude
- \* Full Load Operation Up to 69°C with Heat-Sink M-C655 Natural Convection
- \* Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
ECLB40W-110S33	43-160 VDC	3.3 VDC	0 mA	10000 mA	6 mA	340 mA	88%	10000μF
ECLB40W-110S05	43-160 VDC	5 VDC	0 mA	8000 mA	6 mA	409 mA	88.5%	8000μF
ECLB40W-110S12	43-160 VDC	12 VDC	0 mA	3333 mA	6 mA	404 mA	90%	3300μF
ECLB40W-110S15	43-160 VDC	15 VDC	0 mA	2666 mA	6 mA	399 mA	91%	2700μF
ECLB40W-110D12	43-160 VDC	±12 VDC	0 mA	±1667 mA	6 mA	408 mA	88%	1650μF
ECLB40W-110D15	43-160 VDC	±15 VDC	0 mA	±1333 mA	6 mA	408 mA	88.5%	1350μF
ECLB40W-110D24	43-160 VDC	±24 VDC	0 mA	±833 mA	6 mA	408 mA	89%	850μF

NOTE:

1. Nominal Input Voltage 110 VDC

# SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

Input Voltage Range ..... 110V ..... 43-160V  
 Input Surge Voltage (100ms max.) ..... 200Vdc max.  
 Under Voltage Lockout ..... power up ..... 40V  
 ..... power down ..... 38V  
 Positive Logic Remote On/Off (note4&5)  
 Input Filter ..... Pi Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.  
 Voltage Balance (Dual Output) ..... ±1.0% max.  
 Transient Response: 25% Step Load Change  
 Error Band ..... ±5% Vout Nominal Recovery Time ..... <250µs  
 External Trim Adj. Range (Single Output Models Only) ..... ±10%  
 Ripple & Noise, 20MHz BW (Measured with 1µF MLCC)  
     Vo= 3.3V&5V ..... 100mV pk-pk max  
     Vo=12V, 15V, ±12V& ±15V ..... 150mV pk-pk max.  
     Vo=±24V ..... 200mV pk-pk max.  
 Temperature Coefficient ..... ±0.02%/°C max.  
 Short Circuit Protection ..... Continuous  
 Line Regulation (note1) ..... ±0.2% max.  
 Load Regulation (note2) ..... Single ..... ±0.5% max.  
     Dual ..... ±1.0% max.  
 Cross Regulation (Dual output) Load Cross Variation 10%/100% ..... ±5.0% max.  
 Over Voltage Protection ..... Zener or TVS Clamp  
 Current Limit ..... 110%-170% Nominal Output  
 Start up Time ..... 15ms typ.

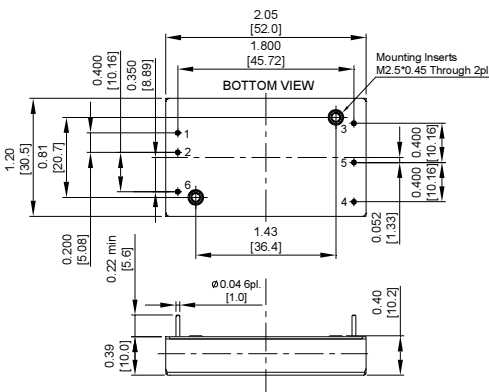
## GENERAL SPECIFICATIONS:

Efficiency ..... See Table  
 Isolation Voltage ..... Input/Output ..... 3000VDC min.  
     Input/Case, Output/Case ..... 1600VDC min.  
 Isolation Resistance ..... 10<sup>9</sup> Ohms min.  
 Isolation Capacitance ..... 1500pF typ.  
 Case grounding ..... Output/case ..... 1000pF typ.  
 Switching Frequency ..... 250KHz typ.  
 EMI/RFI ..... Six-Sided Continuous Shield  
 Operating Ambient Temperature Range ..... -40°C to +85°C  
 De-rating. Above 45°C ..... Linearly to Zero Power at +105°C  
 Case Temperature (note5) ..... 105°C max.  
 Cooling ..... Natural Convection  
 Storage Temperature Range ..... -55°C to +125°C  
 Thermal Shutdown, Case Temp. ..... 110°C typ.  
 Humidity ..... 95% RH max. Non-Condensing  
 MTBF ..... MIL-HDBK-217F. GB, 25°C, Full Load ..... 905Khrs typ.  
 Safety ..... Meet UL60950-1 2nd (Basic Insulation)  
 EMC(note6) ..... Meet EN50155(EN50121-3-2) with External Filter  
 Shock/Vibration ..... Meet EN50155(EN61373)  
 Dimensions ..... 2.05x1.20x0.40inches (52x30.5x10.2mm)  
 Case Material ..... Aluminum with Non-Conductive Base  
 Weight ..... 36g

## NOTE:

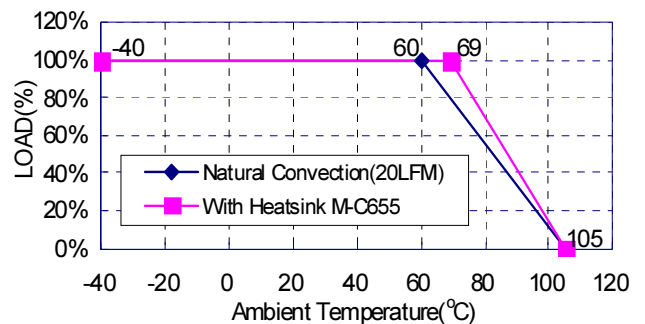
1. Measured from high line to low line.
2. Measured from full load to min. load.
3. Logic Compatibility ... CMOS or open collector TTL, referenced to -Vin.  
     Module on ..... >3.5VDC to 75VDC or open circuit  
     Module off ..... 0 to <1.2VDC
4. Suffix "N" to the model number with negative logic remote on/off  
     Module on ..... 0 to < 1.2 VDC  
     Module off ..... >3.5VDC to 75VDC or open circuit
5. Maximum case temperature under any operating condition should not be Exceeded 105°C.
6. For information about EN50155 and RIA12, refer to application note.

## SIZE LB Dimensions:

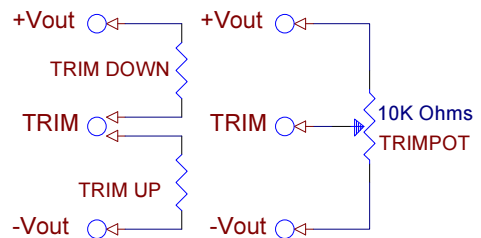


PIN CONNECTION		
PIN	Single Output	Dual Output
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	Trim	-V Output
5	-V Output	Common
6	Remote On/Off	

ECLB40W-110S15 Typical Derating Curve



## External Output Trimming



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